GrainTechnik is an Indian company specialized in the field of grain cooling technology. The company was formed by a group of technocrats with many years of experience in building heavy duty air conditioners using the latest technology. Together with the support of Indian Institute of Technology & Certified Govt. Agricultural bodies, the company is dedicated to put an end to wastage of grain during storage and to eliminate harmful unhygienic fumigation methods while storing freshly harvested grain.

GrainTechnik is the only Indian company to have invested in this line to provide technology transfer suitable for Indian weather conditions. We design, manufacture and supply grain coolers and temperature monitoring systems. Our technologies are customized to each site condition. Our product is a result of several years of Research & Development assisted by feedbacks received from prevailing technologies at farmer & milling locations & in depth understanding of grains through reputed Agricultural Universities. Our Primary focus remains to build technology products that are cost effective, sustainable and highly reliable for conservation of grain.

For us, each grain matters. We are aware of the amount of the nation's grain that is lost not only in quantity but also quality due to chemical treatment, improper storage techniques with gunny bags, warehouses and silos. Grain Technik's vision is to accelerate the world's transformation to natural conservation of grain.
OUR VISION IS TO ACCELERATE WORLD’S TRANSFORMATION TO NATURAL CONSERVATION OF GRAIN

Each grain matters
Our product is a result of several years of Research & Development assisted by feedbacks received from prevailing technologies at farmer & milling locations & in depth understanding of grains through reputed Agriculture Universities. Our Primary focus remains to build technology products that are cost effective, sustainable and highly reliable for conservation of grain. Our primary focus was to assess the root cause of the nation’s stored crop wastage and the best suitable method to preserve grain without losing its nutritional properties. Our core product, the Grain Cooler utilizes the latest technology in the field of refrigeration to control temperature & humidity levels of the grain, stored in either silos or warehouses. By achieving the desired temperature & moisture levels, the grain can be kept safe from any insects, fungus or any losses associated with drying. The GT-Series Grain Coolers are custom built as per environmental conditions & customer requirements. Using the most up to date techniques such as VFD Driven Motors & Compressor Discharge Recycle, we ensure that our product is not only more efficient in operation but keeps running costs to a minimum.

**Advantages of GT- Cooler**

- Maintaining harvest freshness
- No requirement of fumigation and other chemical treatment for insects
- No risk of fungus
- Eliminating drying substance losses
- Moist grain can also be dried using economical drying mode
- No discoloration of grains
- No risk of hotspots
- Pallets cooling to eliminate breakage and stress cracks
- High germination quality
- High standards of safety & ease in operation
- Plug and play unit
- Weather independent operation
A food grain, apart from being our most essential staple requirement, is also a high contributing factor to any nation’s wealth. It is farmed and harvested with great care and effort. According to the World Food Organisation, 1.3 billion tons of grains are wasted every year globally. The major causes of wastage are due to insects, fungus and drying. Grain is also a living organism, which means that when it breathes, it releases carbon dioxide, water and heat. This process leads to loss of weight and quality. The natural heat generation depends on various factors, one of them being the moisture level and temperature at which it is stored. A typical storage condition in a humid & tropical country with ambient temperatures in the range of 30-35 Deg C & Grain moisture content of 15% would lead to heat generation of about 1MJ/T per day, continuously increasing every day.

In addition to grain respiration, insect infestation is also a consequence of natural heat generation. The grain infesting insects being very temperature sensitive, multiply rapidly in temperature zones between 23 Deg C to 33 Deg C. Temperature conditions of 15 Deg C & below are ideal to prevent breeding of most insect species. Even more so, 13 Deg C & below keeps the insects in hibernation without any activity.

Fungus development is another factor contributing to wastage of grains & is also mostly influenced by temperature, humidity and grain moisture content. When warm air from the centre of a bulk/ bin meets cold grain at the surface, condensation may occur. Moisture at the surface or in damp pockets in the bulk will encourage moulds and sprouting. These are toxic for human and animal consumption. Mycotoxin formation is also most likely between temperatures of 16 Deg C and 25 Deg C. By controlled humidity and temperature conditions, the risk of insects and fungus infestation is eliminated.

Do not let your hard earned harvest go to waste. Learn why conservation of grain through cooling is a must!

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### Technical Data

<table>
<thead>
<tr>
<th></th>
<th><strong>9T-100</strong></th>
<th><strong>9T-250</strong></th>
<th><strong>9T-500</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Storage Size</strong></td>
<td>Upto 2000T</td>
<td>Upto 5000T</td>
<td>Upto 10000T</td>
</tr>
<tr>
<td><strong>Nominal Cooling Capacity</strong></td>
<td>47 KW</td>
<td>140 KW</td>
<td>280 KW</td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td>3 Ph, 415V, 50 Hz</td>
<td>3 Ph, 415V, 50 Hz</td>
<td>3 Ph, 415V, 50 Hz</td>
</tr>
<tr>
<td><strong>Supply Air Setting Range</strong></td>
<td>11 - 16 Deg C</td>
<td>11 - 16 Deg C</td>
<td>11 - 16 Deg C</td>
</tr>
<tr>
<td><strong>Refrigerant</strong></td>
<td>R-407C</td>
<td>R-407C</td>
<td>R-407C</td>
</tr>
<tr>
<td><strong>Air Flow @ 1000 Pa Static Pressure</strong></td>
<td>6000 m3/hr</td>
<td>15000 m3/hr</td>
<td>30000 m3/hr</td>
</tr>
<tr>
<td><strong>Approx Dimensions (L X W XH) in mm</strong></td>
<td>2800 X 1200 X 1850</td>
<td>3400 X 1800 X 2200</td>
<td>3800 X 2400 X 2500</td>
</tr>
<tr>
<td><strong>Approx Weight</strong></td>
<td>900 Kg</td>
<td>1900 Kg</td>
<td>3300 Kg</td>
</tr>
</tbody>
</table>

*Nominal Cooling Capacity is based on following conditions:

- Ambient Temperature @ 30 Deg C
- Relative Humidity @ 60%
- Static Pressure @ 1000 Pa
- Air Supply Set Temperature @ 13 Deg C

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**Cooling in a silo**

The cooled air is distributed in the silo/flat storage through a duct system in the bottom of the silo/flat storage. As the cooled/conditioned air moves up through the grain mass the temperature in the grain is reduced, eventually reaching the set value. Grain being an excellent insulator, once cooled to a low temperature, will remain cool for a substantial time period.
Highly reliable combination of Hermetic compressor with automatic capacity regulation and heavy duty heat exchangers using environmentally friendly R-407C refrigerant.

Angled condenser design facing upwards with high quality fan guarantees most efficient heat exchange. Louvers on the side panels ensure air flow and restrict water entering the unit.

Completely sealed electrical cabinet with user friendly Siemens PLC console programmed to handle 11 different types of grains. Auto & manual operation modes. Angled ducting cap for smooth air flow.

Heavy duty IP-55 protection blower with Variable Frequency driven Siemens Motor. Fan speed is adjusted automatically through Variable Frequency Drive for optimized Air Flow.